

Predicting Risk to Reoffend: Validation of the Positive Achievement Change Tool

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Positive Achievement Change Tool (PACT)

- Used to predict future delinquency in the juvenile population
- Based upon the Washington State Juvenile Court Assessment (a.k.a. YASI)
- Developed and validated on the Florida juvenile population
- Implemented in Tarrant County in 2009.



Positive Achievement Change Tool (PACT)

Pre-Screen

- 40 Items
- Multiple Choice

Full Assessment

- 126 Items
- Multiple Choice
- 12 Domains

Both tools generate an overall risk to reoffend which is based on record of referral and social history scores.

The scoring matrix for both tools is identical.

Record of Referrals Risk Score	Social History Risk Score		
	0 to 5	6 to 9	10 to 18
0 to 2	Low	Low	Moderate
3 to 7	Low	Moderate	High
8 to 31	Moderate	High	High

Sample

- All youth (ages 10 to 17) who received a PACT assessment between January 1, 2012 - December 31, 2014.
- The first PACT completed in each cohort year was included in the validation study.
- Three cohorts were formed based on calendar year.

Year	#of Juveniles
2012	3244
2013	3016
2014	2855

Variables

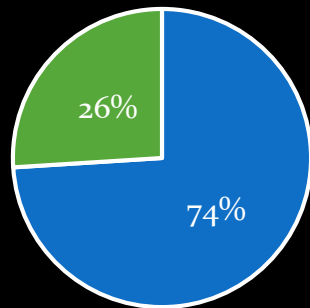
Construct	Operational Definition	Role of Variable	Type/Attribute
Risk to Reoffend	PACT overall risk to reoffend as determined by record of referral and social history score.	Independent	CATEGORICAL Low Moderate High
Record of Referral	Subject's criminal history.	Independent	CONTINUOUS 0-31
Social History	Individual and social risk factors included in the PACT.	Independent	CONTINUOUS 0-18
Recidivism	Any re-referral or rearrest as a juvenile or adult in the state of Texas for a Felony or Class A or B Misdemeanor offense with in 12 to 36 months (depending on the cohort) following the initial PACT assessment.	Dependent	DICHOTOMOUS Yes No
Time to Recidivism	Number of days from assessment to re-referral or rearrest as a juvenile or adult in the state of Texas for a Felony or Class A or B Misdemeanor offense with in 12 to 36 months (depending on the cohort).	Dependent	CONTINUOUS

Analytical Techniques

- ROC Analysis
 - Area Under the Curve
 - Moderate Effect Size $\geq .60$
 - Large Effect Size $\geq .66$
- Survival Analysis

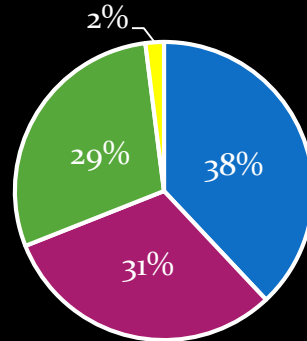
Descriptive Statistics

Gender



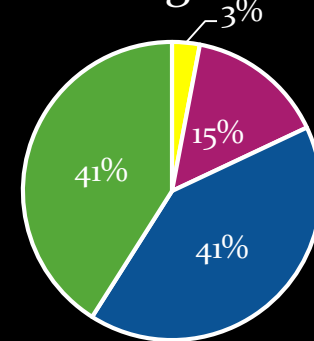
Male Female

Race



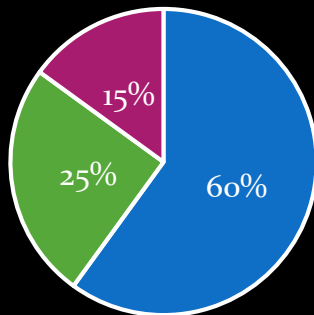
Black Hispanic White Other

Age



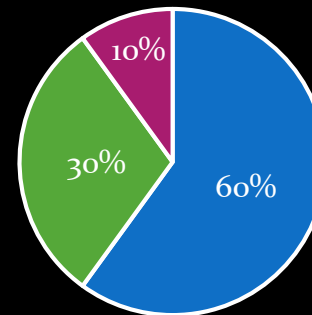
10-11 12-13 14-15 16-17

Risk Level



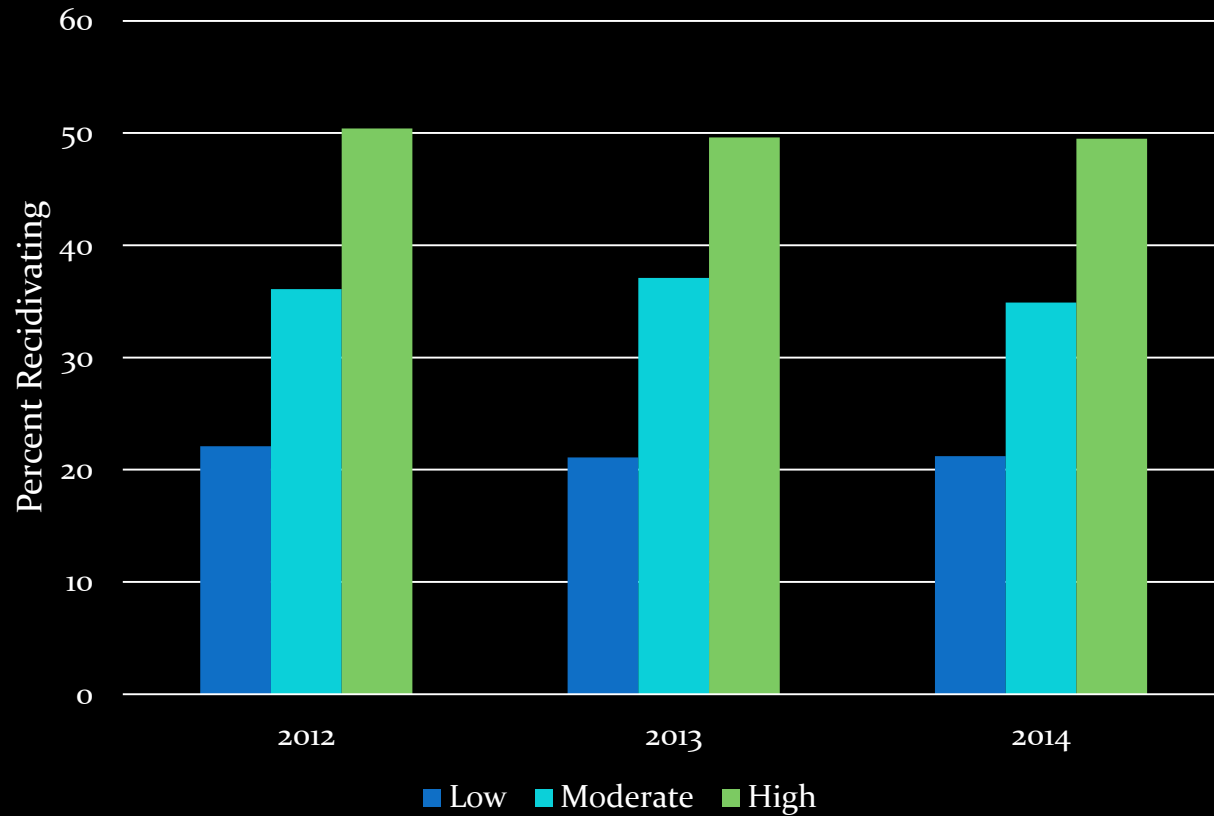
Low Moderate High

Need Level



Low Moderate High

Recidivism Analysis



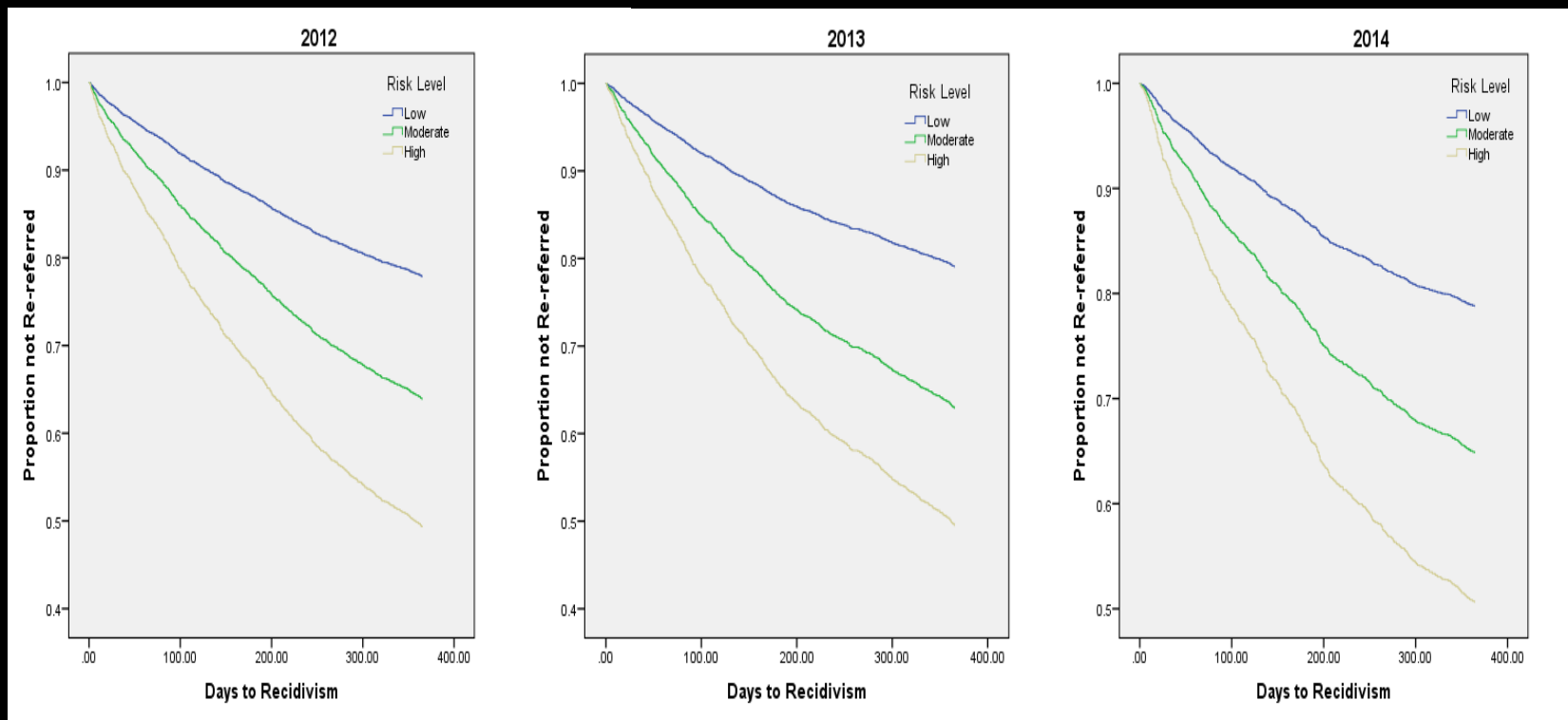
ROC Analysis: AUC

Sample	Cohort	Recidivism	AUC
Total Sample	2012	1 Year	.625
		2 Year	.637
		3 Year	.640
	2013	1 Year	.632
		2 Year	.649
	2014	1 Year	.624
Male Only	2012	1 Year	.620
		2 Year	.636
		3 Year	.640
	2013	1 Year	.629
		2 Year	.646
	2014	1 Year	.621
Female Only	2012	1 Year	.612
		2 Year	.616
		3 Year	.617
	2013	1 Year	.607
		2 Year	.627
	2014	1 Year	.619

ROC Analysis: Sensitivity & Specificity

Cut-off Value	Full Sample Sensitivity	Full Sample Specificity	Male Sample Sensitivity	Male Sample Specificity	Female Sample Sensitivity	Female Sample Specificity
0	100.00	0.00	100.00	0.00	100.00	0.00
>1	56.6	65.7	58.4	62.8	47.9	72.3
>2	25.8	98.1	26.9	87.5	20.7	92.6
>3	0.00	100.00	0.00	100.00	0.00	100.00

Survival Analysis: Overall Risk to Reoffend



Survival Analysis: Record of Referral and Social History

Cohort	Predictor	Hazard Ratio
2012	Record of Referral	1.047
	Social History	1.127
2013	Record of Referral	1.038
	Social History	1.148
2014	Record of Referral	1.020
	Social History	1.163

Survival Analysis: Social History Predictors

Male-Only Sample

2012

School Issues

Peers

Running Away

Family Imprisonment

Alcohol/Drug Use

Mental Health

2013

School Issues

Peers

Running Away

Family Imprisonment

Parental Control

2014

School Issues

Peers

Running Away

Parental Control

Survival Analysis: Social History Predictors

Female-Only Sample

2012

Running Away
Parental Control

2013

Running Away
Parental Control
Mental Health

2014

Running Away
Alcohol/Drug Use
Mental Health

Findings

The PACT demonstrates moderate predictive validity in the prediction of juvenile recidivism.

Findings

Policymakers should consider utilizing a dichotomous risk to reoffend (low and high) when determining the provision of supervision and services.

Findings

Timelines for engaging high risk youth in programs aimed at curtailing their criminogenic needs should be more stringent than those for lower risk youth.

Findings

Social History score is most predictive of future recidivism across gender.

Findings

Significant social history items should be considered in developing and determining gender-specific interventions for juvenile offenders. Programs specifically targeting these criminogenic needs should be offered by TCJS.